E N E R G Y A N D E N V I R O N M E N T A L E N G I N E E R I N G

INORGANIC ANALYSIS DATA SHEET

CLIENT: Corps of Engineers

E3I SAMPLE ID NO.: 93011510

CLIENT SAMPLE ID NO.: #10

Date Received: 10/17/92
Date Prepared: 10/31/92

Matrix: SOIL
% Solids: 79.2

Elements Identified and Measured

Concentrations in mg/kg dry weight

		Method
Arsenic	3.5	F
Cadmium	<0.9	P
Chromium	12	P
Copper	15	P
Lead	21	F
Zinc	79	P

Comments:
"<" means that the element was not detected and that its concentration is less than the indicated value. A value in brackets indicates a concentration within five times the detection limit and therefore of lower precision.
Method codes: P - ICP; F - Furnace AA; CV - Cold vapor mercury
C - colorimetric

E N E R G Y A N D E N V I R O N M E N T A L E N G I N E E R I N G

PREPARATION BLANK

reparation Blank Matrix (soil/water): SOIL

reparation Blank Concentration Units: ug/L

3I Project No.: 930115

Analyte	Prep. Blank Conc.	C	M
Arsenic	1.500	U	F
Cadmium	4.000	U	P
Chromium	5.000	U	P
Copper	4.000	U	P
Lead	1.500	U	F
Zinc	3.000	U	P

Explanation of Codes:
Column: U = Less than indicated detection limit (IDL)
B = Between the IDL and EPA required DL or within 5 times the IDL
M = Method Codes: P = ICP, F = Graphite Furnace AA, CV = Cold Vapor Hg,
C = Colorimetric

E N E R G Y A N D E N V I R O N M E N T A L E N G I N E E R I N G

DUPLICATE RESULTS

E3I SAMPLE ID NO.: 93011510

Matrix (soil/water): SOIL

Concentration Units (ug/L or mg/kg dry weight): mg/kg

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Arsenic	2.2	3.5296		3.2536		8.1		F
Cadmium	1.1	0.8495	U	0.8517	U			P
Chromium	2.1	11.9127		9.1727		26.0	*	P
Copper	5.3	14.8414		12.3601		18.2		P
Lead		20.5449		21.8594		6.2		F
Zinc		78.5271		60.1738		26.5	*	P

Explanation of Codes:
C Column: U = Less than indicated detection limit(DL)
B = Between the DL and the EPA required DL
RPD = Relative per cent difference
Q = Qualifier. Set if results do not meet EPA criteria: RPD less than 20% or difference less than control limit (EPA required DL).
M = Method Codes: P = ICP, F = Graphite Furnace AA, CV = Cold Vapor Hg
C = Colorimetric

E N E R G Y A N D E N V I R O N M E N T A L E N G I N E E R I N G

SPIKE SAMPLE RECOVERY

E3I SAMPLE ID NO.: 93011510

Matrix (soil/water): SOIL

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Arsenic	75-125	50.7200		16.1439		40.0	86.4		F
Cadmium	75-125	41.9000		4.0135	U	50.0	83.8		P
Chromium	75-125	206.1200		56.2787		200.0	74.9	N	P
Copper	75-125	274.8900		70.1151		250.0	81.9		P
Lead		129.0800		93.9681		20.0	175.6		F
Zinc	75-125	703.0000		370.9839		500.0	66.4	N	P

Explanation of Codes:
Column: U = Less than indicated detection limit(DL)
B = Between the DL and EPA required DL
%R = Per cent recovery
Q = Qualifier. Set if results do not meet EPA criteria: %R between 75 and 125% with SR < 4 times the SA
M = Method Codes: P = ICP, F = Graphite Furnace AA, CV = Cold Vapor Hg
NR = element not required to be spiked

ENERGY & ENVIRONMENTAL ENGINEERING, INC.

OIL & GREASE, GRACIMETRIC ANALYSIS

E3I ID:	Client ID:	Oil & Grease mg/Kg
930115-1	WAPPINGERS FALLS # 1	970
930115-2	WAPPINGERS FALLS # 2	2600
930115-3	WAPPINGERS FALLS # 3	3439
930115-4	WAPPINGERS FALLS # 4	4800
930115-5	WAPPINGERS FALLS # 5	1700
930115-6	WAPPINGERS FALLS # 6	2400
930115-7	WAPPINGERS FALLS # 7	760
120115-8	WAPPINGERS FALLS # 8	460
930115-9	WAPPINGERS FALLS # 9	1700
930115-10	WAPPINGERS FALLS #10	360
930115-1MS	Matrix Spike	110%
930115-1MSD	Matrix Spike Duplicate	107%
930115-1MSB	Matrix Spike Blank	100%
QC Blank	----	<1.0

"<" means that the parameter was not detected and that its concentration is less than the indicated value.

aquatec INC.
An Inchcape Company

CORPORATE OFFICES
55 SOUTH PARK DRIVE
COLCHESTER VT 05446

LABORATORY LOCATIONS
55 SOUTH PARK DRIVE
COLCHESTER VT 05446

75 GREEN MOUNTAIN DRIVE
SOUTH BURLINGTON VT 05403

150 HERMAN MELVILLE BOULEVARD
NEW BEDFORD, MA 02740

ANALYTICAL REPORT

Energy & Environmental
Engineering, Inc.
35 Medford Street
Somerville, MA 02143

Attention : Mr. Nick Corso

Date : 11/25/92
ETR Number : 17194
Project No.: 92800
No. Samples: 10
Arrived : 11/05/92
P.O. Number: OS-930064

Project: Wappenger Falls

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.
All results are in mg/l unless otherwise noted.

Lab No./ Method No.	Sample Description/ Parameter	Result
24081	#1:10/16/92 @1200(SOIL)	
QSIA	Sulfate in Soil	<110 f
IN623	% Solids	27.5
24082	#2:10/16/92 @1200(SOIL)	
QSIA	Sulfate in Soil	<260 f
IN623	% Solids	12.9
24083	#3:10/16/92 @1200(SOIL)	
QSIA	Sulfate in Soil	530 f
IN623	% Solids	17.6
24084	#4:10/16/92 @1200(SOIL)	
QSIA	Sulfate in Soil	<150 f
IN623	% Solids	22.5
24085	#5:10/16/92 @1200(SOIL)	
QSIA	Sulfate in Soil	<190 f
IN623	% Solids	18.5
24086	#6:10/16/92 @1200(SOIL)	
QSIA	Sulfate in Soil	<155 f
IN623	% Solids	21.4

Comments/Notes

f = mg/Kg dry weight

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aquatec INC.
An Inchcape Company

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Lab No./ Method No.	Sample Description/ Parameter	Result
24087	#7:10/16/92 @1200(SOIL)	
QSIA	Sulfate in Soil	<54 f
IN623	% Solids	45.0
24088	#8:10/16/92 @1200(SOIL)	
QSIA	Sulfate in Soil	155 f
IN623	% Solids	48.8
24089	#9:10/16/92 @1200(SOIL)	
QSIA	Sulfate in Soil	<115 f
IN623	% Solids	26.2
24090	#10:10/16/92 @1400(SOIL)	
QSIA	Sulfate in Soil	<13 f
IN623	% Solids	83.3

Comments/Notes

f = mg/Kg dry weight

< Last Page >

Submitted By : Stephen O'Neil

Aquatec Inc.

Energy & Environmental Engineering, Inc.
Phone: (617) 666-5500 FAX: (617) 666-5802
35 Medford St.
Somerville, MA 02143
P.O. Box 2
E. Cambridge, MA 02141

CHAIN OF CUSTODY RECORD

Page ___ of ___

Client Name: US Army Corps of Engineers Project #: Contract # DACW51-92-D-0013 Project Name: Wappinger Falls P.O. #

Client Address: 26 Federal Plaza, NYC 10278 Telephone # 212-264-1275

Report To: Rena Werchenberg, Project Geologist Date Results Required: ASAP Invoice To: Rena Werchenberg

Sample Identification	Date / Time Sampled	Sample Type	As	Cd	Cr	Pb	Zn	Hex Cr	Cyanides	RCB	Ignitability	Volatile Organics	Semi-volatile Organics	Environmental	Total # of cont.	Comments
Wappinger Falls #1	11/10 - 12:0	solid/soil	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	2	Organic chemical analysis includes list - individual specific TAL when SOW is finalized.
" " #2															2	
" " #3															2	
" " #4															2	
" " #5															2	
" " #6															2	
" " #7															2	
" " #8															2	
" " #9															2	
" " #10	~2:00	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	↓	2	

Relinquished by (Signature)	Date / Time	Received by (Signature)
Rena Werchenberg	11/10/92	A. Fed ex
Relinquished by (Signature)	Date / Time	Received by (Signature)
Fex ex	10/17/92 9:25am	Alison M. Burkin
Relinquished by (Signature)	Date / Time	Received by (Signature)

Remarks:

IV. QUALITY ASSURANCE STATEMENT

This data has been reviewed and is hereby authorized for release by:

Nicholas P. Corso
Executive Vice President

New York State Department of Environmental Conservation
Region 3
21 South Putt Corners Road
New Paltz, NY 12561-1696
914-255-5453

July 17, 1992

RENA WEICHENBERG
US ARMY CORPS ENGINEERS
ENVIRONMENTAL ANALYSIS BRANCH
26 FEDERAL PLAZA
NEW YORK NY 10278

Dear Ms. Weichenberg:

Enclosed is a copy of a Wappingers Lake contour map which we constructed in 1981. Although contours are shown at five foot intervals the map was carefully constructed and I think it has historical value in that it shows full pool depths as they were in 1981.

Fisheries surveys were made in 1963 and 1970. A special fish collection for toxic substance analysis was made in 1981, and a special collection of largemouth bass for a genetic study was made in 1986 (copies enclosed).

Fish collected have included largemouth bass, smallmouth bass, yellow perch, redbreast sunfish, bluegill, pumpkinseed, black crappie, rock bass, brown bullhead, golden shiner, American eel, carp and white suckers.

Largemouth bass are the principal gamefish. Panfish and carp also provide good fishing opportunity. Despite the lake's weed problems I believe that it receives a moderate amount of fishing pressure.

In reviewing the data we have, I see that in 1963 aquatic vegetation was described as being comprised of fair amounts of submerged vegetation. In 1970 it was reported that "Aquatic vegetation does not appear to be a problem at the present time. The report further stated that only below Wappingers Creek outlet was there an area where weeds could affect boating. At this time (August 11 and 12) an algae bloom was reported.

In our phone conversation, I said that I noticed only a few individual water chestnut plants in 1981 while collecting depth recordings for the contour map. Upon checking our files I was reminded of the 1986 special collection mentioned earlier. Unfortunately in both cases my notes made no reference to water chestnuts. In view of this, I believe that water chestnuts were

not present, beyond small numbers, as late as 1986. I do however recall various (unrecorded) species of rooted aquatic vegetation as being abundant to the point of limiting boating activity to the lake's deepest areas.

I have checked with several people at our office regarding any possible testing of lake sediments for toxic substances. To our knowledge none has been done.

I hope this information will be of aid to you.

Sincerely,

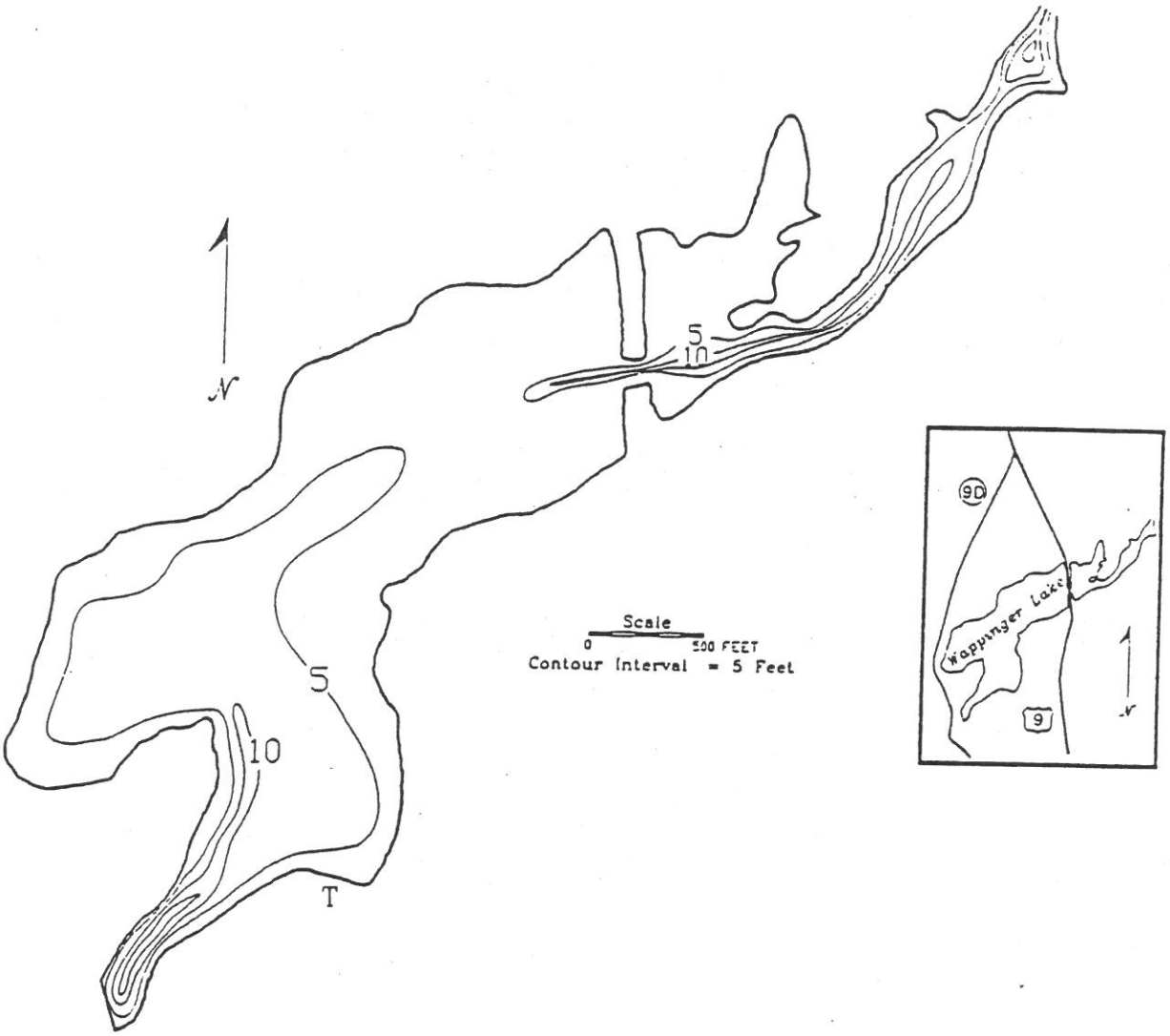
Ronald Pierce

Ronald Pierce
Senior Aquatic Biologist
Region 3

RP:sc

Enclosure

Wappinger Lake



LOCATION

Pond Number:	365
Latitude:	413603
Longitude:	735511
Watershed:	Lower Hudson
County:	Dutchess
Topographic Quad:	Wappingers Falls

MORPHOMETRY

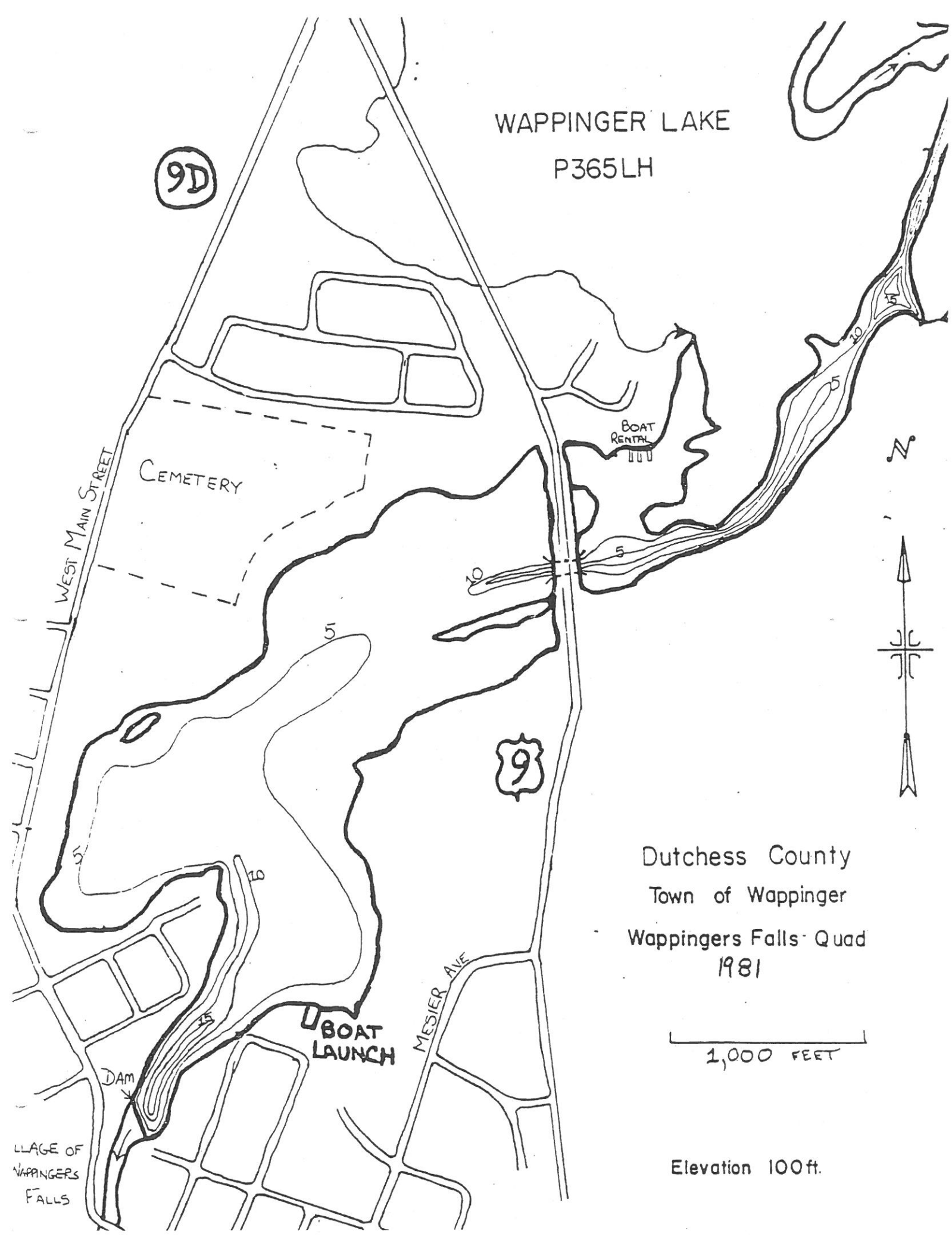
Surface Area	100.3	ac	40.6	ha
Shoreline Length:	3.74	mi	6.02	Km
Elevation:	85	ft	26	m
Mean Depth:	4.6	feet	1.4	m
Maximum Depth:	16.1	feet	4.9	m
Volume:	454.0	ac-ft	5.6	$10^5 m^3$
Watershed Area:	181.00	mi^2	468.79	Km^2
Hydraulic Ret. Time:	0.00	yr		
Outlet Dam:	Yes			
Water Quality Class:	B			
Access Type:	PuT			

SPORT FISH

LMB,PKL,CAR,PANFISH

NOTE: Rental boats available.

112 Acres


WAPPINGER LAKE
P365LH
9D
CEMETERY
WEST MAIN STREET
BOAT RENTAL
9
BOAT LAUNCH
MESIER AVE
DAM
LLAGE OF
WAPPINGERS
FALLS
5
10
15
N
Dutchess County
Town of Wappinger
Wappingers Falls Quad
1981
1,000 FEET
Elevation 100ft.


CANALE MEMORIAL PARK
WAPPINGER LAKE
MUSKRAT ISLAND
WAPPINGER LAKE
WEST MAIN STREET
WEST STREET
ROY AVENUE
BROWN AVENUE
SCHOOL STREET
LISS
ROAD
ALBANY
9

1977